

Observations on Elasmobranchs from Georgia

MICHAEL D. DAHLBERG AND RICHARD W. HEARD, III

GEORGIA has one of the least studied inshore fish faunas of the Atlantic coast. Extensive collecting by hook and line in Georgia sounds, mostly in 1967 and 1968, permitted observations on life histories of several species of sharks and sting rays.

Galeocerdo curvieri (Peron and Le Sueur). TIGER SHARK

Two females 1842 mm (6'6") and 1869 mm (6'7") total length were caught in Wassaw Sound on 27 July 1968 and 3 August 1968. The stomach of a 3581 mm (11'9") male caught in Ossabaw Sound in July, 1958, contained remains of a large sea turtle.

Aprionodon isodon (Müller and Henle). FINETOOTH SHARK.

This little known shark was thought to be rare off South Carolina (Bearden, 1965). Thirty specimens caught on 13 different occasions from 15 July 1968 to 12 September 1968 in McIntosh County (Sapelo Island Beach and Mud River) and Wassaw Sound are the first Georgia records. Ten small specimens caught on 5 September 1968 comprise the largest single collection. The sex ratio of 29 specimens was 16 females and 13 males. Twenty-eight specimens ranged from 520 to 728 mm, and one each was 940 and 1445 mm. Springer (1950) reported a 1550 mm specimen from Florida. Stomach contents of smaller specimens included fish (*Brevoortia tyrannus*, *Cynoscion regalis*), and two small snail shells (*Nassarius vivax*).

Negaprion brevirostris (Poey). LEMON SHARK

Ten lemon sharks, 580 to 950 mm long, were caught on 6 August 1967 and from 14 July to 5 September 1968, all near "Big Hole" on Sapelo Island Beach. Two medium-sized females, 1601 and 1800 mm, were collected on 14-15 July 1968 at Sapelo Island beach. The larger specimen weighed 85 lbs. (38.8 kg). Five specimens, 2389 to 2694 mm, were collected at Sapelo Island beach on 6 June 1967 and at Wassaw Sound, Ossabaw Sound (Pine Island) and St. Simons Sound from 5 July to 18 August 1968. A 2600 mm male

weighed 225 lbs. (102.7 kg). A 233 mm *Echeneis naucrates* was attached to this specimen. Sex ratio of the large specimens was one male and four females. The stomach of a 2389 mm specimen contained two small sting rays (*Dasyatis*).

Carcharhinus acronotus (Poey). BLACKNOSE SHARK

Five males, 1210-1310 mm, which represent the first Georgia records for this species, were caught off Sapelo Island beach 20 August 1968. Menhaden (*Brevoortia tyrannus*) were found in stomachs of two specimens. The dusky snout of this species becomes diffuse in adults; accordingly the smallest specimen had the darkest snout.

Carcharhinus limbatus (Müller and Henle). BLACKTIP SHARK

Twenty-seven small specimens, of which 10 males and 14 females were 590-1070 mm, were collected from 2 July to 9 September 1968. Two are from Wassaw Sound and the rest are from McIntosh County (Sapelo Island beach, Cabretta beach, Mud River). One 1622 mm male collected on 2 July 1968 on Sapelo Island beach had small fishes, including menhaden (*Brevoortia tyrannus*), in its stomach.

Carcharhinus milberti (Müller and Henle). SANDBAR SHARK.

Three males and nine females, 1054-2195 mm, were caught in Wassaw Cut and Doboy Sound and at Sapelo Island beach, in June and July of 1967 and 1968. Nine smaller specimens, 605-800 mm, were collected on two trips to Mud River in August 1968. Lengths and weights of 3 females were: 1990 mm and 118 lbs. (53.5 kg), 1695 mm and 73 lbs. (33.1 kg), 2100 mm and 133 lbs. (60.3 kg). Stomach contents of four specimens included *Loligo brevis*, *Penaeus* sp., *Brevoortia tyrannus*, one *Stenotomus caprinus*, and unidentified small fish.

Sphyrna lewini (Griffith and Smith). SCALLOPED HAMMER-HEAD

Seven specimens, 571-940 mm, were referable to this species, although *S. zygaena* is also common along the South Atlantic coast

TABLE 1

Proportions and sexes of *Dasyatis americana* specimens from the Georgia coast

Disc Width	Disc Length	Total Length	Sex
1395 mm	82.1%	150.6%	F
1235	91.9	—	F
1278	83.7	—	F
1000	95.5	171.2	F
1260	88.8	—	F
850	82.3	200.0	—
520	87.5	215.3	M
750	—	160.0	M
930	90.3	224.7	F
812	90.7	145.5	F
607	91.1	247.1	F
522	90.4	218.5	M

Disc width given in mm. Disc length and total length are per cent of disc width.

(Bearden, 1965). Specimens were caught at Wassaw Cut, Wassaw Sound, Cabretta Island and Mud River from 6 July 1968 to 17 August 1968. Gilbert (1967) reported a specimen from St. Simons Sound, Georgia.

Squalus acanthias Linnaeus. SPINY DOGFISH

A population increase occurred after 1961 on the South Carolina coast when water temperatures were below 15 C (Bearden, 1965). We caught two specimens in winter, one on 24 January 1967 in St. Simons Sound, and one on 10 February 1968 in Dobby Sound. A 830 mm specimen had five unborn young, and a 834 mm specimen contained two young which measured 148 and 151 mm. Stomach contents included *Penaeus* sp., menhaden, anchovies, and unidentified small fishes.

Ginglymostoma cirratum (Bonnaterre). NURSE SHARK

A six-foot specimen was caught in June, 1968, at Pine Island in Ossabaw Sound by Mr. Jerry Williamson. A three foot specimen was caught in Wassaw Sound in the summer of 1959.

Most shark records resulted either from fishing where sharks were generally abundant, in the Savannah area, or from fishing on dense schools of menhaden. Fresh bait is preferred to frozen or stale bait. Some smaller sharks bit shrimp, but most sharks were caught on mullet, menhaden, sting ray, or shark. Jumping blacktip sharks and dorsal fins of feeding lemon sharks and tarpon often marked menhaden schools which are characteristically located by their flipping at the surface.

Our collections indicate the following sharks are common in Georgia sounds during warm months from June to September, *Aprionodon isodon*, *Carcharhinus limbatus*, *Carcharhinus milberti*, *Galeocerdo cuvieri*, *Negaprion brevirostris*, and *Sphyrna lewini*. *Squalus acanthias* was caught only during January and February.

Dasyatis americana Hildebrand and Schroeder. SOUTHERN STING RAY

This species was caught during warmer months from 24 May to 15 October in 1967 and 1968. Our specimens came from Sapelo Island beach, Doboy Sound, Mud River, and Wassaw Sound. Four specimens (Table 1) are larger than a 1013 mm (disc width) specimen reported by Bearden (1965) for South Carolina. Bigelow and Schroeder (1948) reported a larger specimen (60 inches, 1524 mm) from Bimini. Of 14 adults, the two males averaged a smaller size (520 and 750 mm disc width) than the 12 females. Disc width and weights for three females were: 1395 mm and 73.5 kg, 1235 mm and 48.4 kg, 1278 mm and 63.0 kg. Proportions are negatively allometric when adults (Table 1) are compared to seven specimens (113-118 mm) aborted from the 1395 mm female. In the aborted rays disc length is 92.9 to 95.6 per cent and total length is 282-290 per cent of disc width. The lowest total length values in adults result from injured tails.

Pregnant females were caught on 6 June 1967 and 6 July 1968. One litter contained seven specimens.

Stomach contents included crabs (*Hepatus ephelcticus*, *Callinectes* sp., *Portunus* sp.), white shrimp (*Penaeus setiferus*), mantis

shrimp (*Squilla empusa*), mud shrimp (*Upogebia affinis*), and small fish including one *Cynoscion regalis*. *Squilla* and *Upogebia* were common food. Mullet and other fish are good bait. This species conspicuously avoided cannibalism as we never caught it on sliced sting ray.

Rhinoptera bonasus (Mitchell). COWNOSE RAY

A 902 mm (disc width) female caught on 14 September 1967 in Calibogue Sound, South Carolina, near the Georgia border, was larger than specimens reported by Bigelow and Schroeder (1953) and Bearden (1965). Pinfish (*Lagodon rhomboides*) was used for bait. Several adult cownose rays caught at Savannah Beach in August, 1968, were identified by Savannah Science Center personnel.

The most common sting ray in Georgia sounds is *Dasyatis sabina*. *D. americana* is more common than *D. sayi*.

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Marine Institute, University of Georgia, Sapelo Island, Georgia
31327.

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